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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,618	05/05/2006	Katsumi Shibayama	046124-5395	7829
23973 7590 12/17/2009 DRINKER BIDDLE & REATH ATTN: INTELLECTUAL PROPERTY GROUP ONE LOGAN SQUARE 18TH AND CHERRY STREETS PHILADELPHIA, PA 19103-6996				
EXAMINER				
MAL ANH D				
ART UNIT		PAPER NUMBER		
2814				
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12/17/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/541,618

**Applicant(s)**

SHIBAYAMA ET AL.

**Examiner**

Anh D. Mai

**Art Unit**

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 September 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5, 10 and 11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/GS-08)  
Paper No(s)/Mail Date 3/17/2009; 9/16/2009  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Status of the Claims***

1. Amendment filed September 10, 2009 is acknowledged. Claim 1 has been amended. Claims 10 and 11 have been added. Non-Elected invention, claims 6-9 have been withdrawn from consideration. Claims 1-11 are pending.

Action on merits of claims 1-5, 10 and 11 follows.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on March 17 and September 16, 2009 were filed after the mailing date of the Office Action on March 12, 2009. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Terminal Disclaimer***

3. The terminal disclaimer filed on September 10, 2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 7,326,907 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Claims Objection***

4. Claims 3-5 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel

the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

With respect to claim 3, Claim 3 recite: “the wiring substrate according to claim 1, the conductive member of each of the first wiring substrate and second wiring substrate **is formed and disposed on the inner wall of the through hole** that is provided in the glass substrate”.

The limitations of claim 1 include: “... through holes, and conductive members, disposed in the through holes ...”.

When the conductor “disposed in the through holes” (claim 1), it is certainly that the conductor disposed on the **inner wall of the holes, because the through holes do not have outer wall**.

Therefore, claim 3 fails to further limit claim 1.

In the remark filed September 10, 2009, Applicant fails to provide any evidence to the contrary.

With respect to claim 4, Claim 4 recites: “the wiring substrate according to claim 1, wherein the conductive member of each of the first wiring substrate and second wiring substrate is **disposed by filling the interior of the through hole** that is provided in the glass substrate”.

**How the holes are filled fails to further limit the existent of the conductive material in the holes of claim 1.**

When the conductor “disposed in the through holes” (claim 1), it is certainly that the conductor disposed by **filling the interior of the through holes, because the through holes do not have exterior**.

Therefore, claim 4 fails to further limit claim 1.

In the remark filed September 10, 2009, Applicant fails to provide any evidence to the contrary.

With respect to claim 5, claim 5 recites: “(a) wherein the glass substrate of each of the first wiring substrate and second wiring substrate is a glass substrate, (b) wherein a plurality of the through holes are provided by fusing together and integrally forming a plurality of hollow glass members that are open at both ends”.

Regarding item (a), claim 1 already recites: “each wiring substrate respectively comprising a glass substrate”. Therefore, claim 5, at least item (a) fails to further limit claim 1.

Regarding item (b), the “**hollow glass members**” of claim 5 is just another way to call “through holes” of claim 1, of course the “through hole” is open at both ends.

The term “through holes are provided by fusing together and integrally forming a plurality hollow glass members”, since the “through holes” or “hollow glass members” has been cited in claim 1, how the holes are formed fails to further limit the holes that are already existed.

Therefore, **claim 5 fails to further limit claim 1**.

In the remark filed September 10, 2009, Applicant fails to provide any evidence to the contrary.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen (US Patent No. 5,477,933) in view of Mattson et al. (US Patent No. 7,379,528) of record.

With respect to claim 1, Nguyen, Fig. 4, teaches a wiring substrate, having a conduction path that guide an electrical signal between a signal input surface and a signal output surface substantially as claimed, the wiring substrate includes:

at least a first wiring substrate (28), disposed at the signal input surface side, and a second wiring substrate (13), connected to the first wiring substrate (28) at the signal output surface side, each wiring substrate respectively comprising substrate, \*\*formed of a predetermined glass material having a radiation shielding function and\*\* provided with through hole, and conductive member, disposed in the through hole and functioning as the conduction path by providing electrical continuity between the input surface and the output surface, and

wherein in the view in the conduction direction from the signal input surface to the signal output surface, the position of the through holes in the first wiring substrate (28) differs from the position of the through holes in the second wiring substrate (13), and

the through holes and the conductive members (19) in the second wiring substrate (13) are formed at a pitch which is smaller than a pitch of the through holes and the conductive members in the first wiring substrate (28).

Thus, Nguyen is shown to teach all the features of the claim with the exception of explicitly disclosing the material for the first and second wiring substrate.

However, Mattson teaches a wiring substrate, having conduction paths (288) that guide an electrical signal between a signal input surface and a signal output surface including at least a first wiring substrate (286), disposed at the signal input surface side, and a second wiring substrate (286'), connected to the first wiring substrate (286) at the signal output surface side, each wiring substrate respectively comprising a glass substrate, formed of a predetermined glass material having a radiation shielding function and provided with through hole, and conductive member (288), disposed in the through holes and functioning as the conduction paths by providing electrical continuity between the input surface and the output surface, and wherein in the view in the conduction direction from the signal input surface to the signal output surface, the position of the through holes in the first wiring substrate (286) differs from the position of the through holes in the second wiring substrate (286'). (See Fig. 16).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to form the first and second wiring substrate of Nguyen utilizing glass material as taught by Mattson for the same intended purpose of providing electrical connection between input and output signals.

Further, it has been held to be within the general skill of a worker in the art to select a known material, *glass*, on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416., 125 USPQ 416.

With respect to claim 2, in view of Mattson, each of the first wiring substrate (286) and the second wiring substrate (286') is formed of the glass material that contains lead.

With respect to claim 3, in view of Mattson, the conductive member (288) of each of the first wiring substrate (286) and second wiring substrate (286') is formed and disposed on the inner wall of the through hole (90) that is provided in the glass substrate.

With respect to claim 4, in view of Mattson, the conductive member (288) of each of the first wiring substrate (286) and second wiring substrate (286') of Mattson is disposed by filling the interior of the through hole (90) that is provided in the glass substrate.

With respect to claim 5, in view of Mattson and insofar as the structure is concerned, the glass substrate of each of the first wiring substrate (286) and second wiring substrate (286') of Mattson is a glass substrate, wherein a plurality of the through holes (90) are provided by fusing together and integrally forming a plurality of hollow glass members (90) that are open at both ends.

With respect to claim 10, the conductive members of the first wiring substrate (28) of Nguyen are electrically connected to the corresponding conductive members (19) of the second wiring substrate (13) via bump electrodes (23),

the bump electrodes (23) are electrically connected directly to output portions, formed on the output surface of the first wiring substrate (28), of the corresponding conductive members of the first wiring substrate, and

the bump electrodes (23) are electrically connected via wirings to input portions, formed on the input surface of the second wiring substrate (13), of the corresponding conductive members (19) of the second wiring substrate (13).



With respect to claim 11, Nguyen further teaches, in addition to input portions of the conductive members, electrode pads electrically connected via wirings to the input portions of the corresponding conductive members are formed on the input surface of the first wiring substrate (28).

***Response to Arguments***

6. Applicant's arguments filed September 10, 2009, regarding Claims Objection, have been fully considered but they are not persuasive.

Applicant traversed the Objections and referring to the drawings, 6A, 6B, 7A, 7B, etc., but did not provide any evidence to the contrary.

The Objection to claims 3-5 is maintained.

7. Applicant's arguments with respect to amended claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh D. Mai whose telephone number is (571) 272-1710. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anh D. Mai/  
Primary Examiner, Art Unit 2814